## ABSTRACT

The present invention provides a method for producing a sealed  $^{210}\text{Pb}-^{210}\text{Po}$   $\alpha$  source ( $\alpha$  particle emitter) and an apparatus thereof, which can be used 5 as an  $\alpha$  particle source for a random pulse generator. The method for producing a sealed  $^{210}\text{Pb-}^{210}\text{Po}~\alpha$  source ( $\alpha$  particle emitter) includes the steps of: collecting 210 Pb-210 Po with a 210 Pb collector using 10 radon collection; precipitating the hydroxides of the collected 210 Pb-210 Po and collecting the precipitates by a polycarbonate (PC) filter; dissolving the <sup>210</sup>Pb-<sup>210</sup>Po hydroxide precipitate to form a <sup>210</sup>Pb-<sup>210</sup>Po radioactive thin film; and sealing the 210Pb-210Po radioactive thin film for protection. 15